

CLAIMS:-

1. A method of treating an animal comprising the steps of:

(1) selecting from a pool of antibodies occurring in a first species of vertebrate a paratopic set the members of which are antibodies with specificity for a specific antigen or antigen epitope expressed in one or more members of said first species and not expressed in members of a second species;

(2) utilizing one or more members of said prototypic set, or paratopic fragments thereof, as an immunogen in a host of the second species, wherein said second species is selected such that the immune system of said second species does not recognise the specific antigen or antigen epitope uniquely expressed in one or more members of said first species, or said paratopic set or paratopic fragment thereof are utilized as an immunogen in an in vitro incubation system comprising cells derived from the same or a different species to produce one or more antibodies having a characteristic which is anti-paratopic with respect to the antigen or antigen epitope uniquely expressed in one or more members of said first species; and

(3) introducing anti-paratopic antibodies produced in step 2 into the same or a different member of the first species selected in step 1.

2. A method according to claim 1 wherein the prototypic antibodies are neutralizing antibodies.

3. A method according to claim 1 wherein the prototypic antibodies are human antibodies.

4. A method according to claim 3 wherein the prototypic human antibodies are naturally occurring antibodies.

5. A method according to claim 1 wherein the antibodies are human antibodies to HIV.

6. A method of immunizing a subject comprising the steps of:

(1) selecting from a pool of antibodies occurring in a first species of vertebrate a paratopic set the members of which are antibodies with specificity for a specific antigen or antigen epitope expressed in one or more members of said first species and not expressed in members of a second species;

(2) utilizing one or more members of said prototypic set, or paratopic fragments thereof, as an immunogen in a host of the second species, wherein said second species is selected such that the immune system of said second species does not recognise the specific antigen or antigen epitope uniquely expressed in one or more members of said first species, or said paratopic set or paratopic fragment thereof are utilized as an immunogen in an in vitro incubation system comprising cells derived from the same or a different species to produce one

20 or more antibodies having a characteristic which is  
anti-paratopic with respect to the antigen or  
antigen epitope expressed in one or more members of  
said first species but not expressed in members of  
the second species; and

25 (3) introducing anti-paratopic antibodies produced  
in step 2 into a subject of the same species  
selected in step 1 wherein said subject has not been  
exposed to the immunogen which possesses said  
specific antigen or antigen epitope of step 1.

7. Anti-paratopic antibodies produced according to the  
method defined by claim 1.

8. A method of manufacture of an anti-paratopic  
antibody efficacious against mammalian infections  
comprising the steps of:

5 (1) selecting from a pool of antibodies occurring  
in a first species of vertebrate a prototypic set  
the members of which are antibodies with specificity  
for a specific antigen or antigen epitope uniquely  
expressed in one or more members of the first  
species but not expressed in members of the second  
10 species;

(2) utilizing one or more members of said  
prototypic set, or paratopic fragments thereof, as  
an immunogen in a host of the second species,  
wherein said second species is selected such that  
15 the immune system of said second species does not

5 recognise the specific antigen or antigen epitope  
uniquely expressed in one or more members of said  
first species, or said paratopic set or paratopic  
fragments thereof are utilized as an immunogen in an  
10 in vitro incubation system comprising cells derived  
from the same or a different species, to produce one  
or more antibodies having a characteristic which is  
anti-paratopic with respect to the antigen or  
antigen epitope expressed in one or more members of  
said first species but not expressed in members of  
the second species; and

(3) selecting and purifying said anti-paratopic  
antibodies produced according to step 2.

9. A method according to claim 8 wherein the prototypic  
antibodies are human antibodies.

10. A method according to claim 9 wherein the prototypic  
human antibodies are naturally occurring antibodies.

11. A method according to claim 8 wherein the antibodies  
are human antibodies to HIV.

12. A method according to claim 11 wherein the  
antibodies to HIV are enzymatically cleaved to remove the  
Fc component and conjugated to immunogenic carriers before  
step 2.

13. A method according to claim 11 wherein after step 2,  
spleen cells of the species employed in step 2 are  
harvested, fused to myeloma cells and the resulting  
hybridoma cells are cultured.

14. Monoclonal antibodies produced by the hybridoma cells in claim 13.

15. A method of immunizing a subject comprising the administration of an anti-paratopic antibody produced according to claim 8 to said subject, wherein the prototypic antibody is produced by the species of which
- 5 the subject is a member.
16. Anti-paratopic antibodies produced according to the method defined by claim 8.